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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,340	07/03/2003	Stephen L. Bass	10981292-2	5093

7590 10/27/2004

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER
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DO, CHAT C

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/613,340

Applicant(s)

BASS ET AL.

Examiner

Chat C. Do

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/03/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Taborn et al. (U.S. 5,550,767).

Re claim 1, Taborn et al. disclose in Figures 2 and 4 an exponent computation apparatus for performing either an overflow or underflow comparison while minimizing overflow/underflow comparison circuitry (abstract and col. 2 lines 15-24), apparatus comprising: overflow/underflow possible check circuitry (Figure 2 and 4 as output signal of 72 and col. 9 lines 34-41), overflow/underflow possible check circuitry configured to determine if a mathematical operation involving a first exponent signal and a second exponent signal (B and AC exponents) creates a potential overflow condition (output of 80), overflow/underflow possible check circuitry configured to generate a signal indicating if overflow condition is a possibility (output of 80); and exponent compare circuitry (78-79), exponent compare circuitry configured to compute an actual overflow/underflow condition (78-79), exponent compare circuitry configured to compute an actual overflow condition if signal indicates overflow is possible (79 with output of 80 as 72 enable), and exponent compare circuitry configured to computes an

actual underflow condition if signal does not indicate overflow is possible (78 with output of 72 enable).

Re claim 2, Taborn et al. further disclose in Figures 1-4 an exponent compare circuitry generates an error signal if an actual overflow/underflow condition exists (col. 9 lines 41-48 and col. 9 lines 60-65).

Re claim 3, Taborn et al. further disclose in Figures 1-4 a pre-normalized exponent selection circuitry configured to determine a larger exponent between first exponent signal and second exponent signal (Figures 1 and 2).

Re claim 4, Taborn et al. further disclose in Figures 1-4 an overflow/underflow possible check circuitry uses largest exponent to determine if mathematical operation between first exponent signal and second exponent signal creates overflow condition (Figure 2 part 51 and col. 7 lines 61-68).

Re claim 5, Taborn et al. further disclose in Figures 1-4 an exponent shift amount circuitry configured to determine how much the mantissa of largest exponent must be shifted to be normalized, and configured to compute a normalized exponent (35 and 39 in Figure 1).

Re claim 6, Taborn et al. further disclose in Figures 1-4 an exponent compare circuitry uses normalized exponent to determine if mathematical operation between first exponent signal and second exponent signal creates overflow condition (Figure 2 part 51 and col. 7 lines 63-68 and col. 8 lines 1-9).

Re claim 7, it is a method claim of claim 1. Thus, claim 7 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 8, it is a method claim of claim 2. Thus, claim 8 is also rejected under the same rationale as cited in the rejection of rejected claim 2.

Re claim 9, it is a method claim of claim 3. Thus, claim 9 is also rejected under the same rationale as cited in the rejection of rejected claim 3.

Re claim 10, it is a method claim of claim 4. Thus, claim 10 is also rejected under the same rationale as cited in the rejection of rejected claim 4.

Re claim 11, it is a method claim of claim 5. Thus, claim 11 is also rejected under the same rationale as cited in the rejection of rejected claim 5.

Re claim 12, it is a method claim of claim 6. Thus, claim 12 is also rejected under the same rationale as cited in the rejection of rejected claim 6.

Re claim 13, it is an apparatus claim of claim 1. Thus, claim 13 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 14, it is an apparatus claim of claim 2. Thus, claim 14 is also rejected under the same rationale as cited in the rejection of rejected claim 2.

Re claim 15, it is an apparatus claim of claim 3. Thus, claim 15 is also rejected under the same rationale as cited in the rejection of rejected claim 3.

Re claim 16, it is an apparatus claim of claim 4. Thus, claim 16 is also rejected under the same rationale as cited in the rejection of rejected claim 4.

Re claim 17, it is an apparatus claim of claim 5. Thus, claim 17 is also rejected under the same rationale as cited in the rejection of rejected claim 5.

Re claim 18, it is an apparatus claim of claim 6. Thus, claim 18 is also rejected under the same rationale as cited in the rejection of rejected claim 6.

### ***Double Patenting***

3. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

4. Claims 19-22 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-4 of prior U.S. Patent No. 6,633,895. This is a double patenting rejection.

Even though, the limitation in the preamble is slightly different wherein the preamble of the instant applicant claims a computation of either an overflow or underflow conditions and the preamble of U.S. Patent No. 6,633,895 claims a computation of both overflow and underflow conditions, however the claim body does not include any limitation to support the selection of either condition. Therefore, the limitation cited in the preamble of instant application has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

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5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 23-26 are rejected under the judicially created doctrine of double patenting over claims 6-9 of U. S. Patent No. 6,633,895 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Claims 6-9 of U.S. Patent No. 6,633,895 contain every element of claims 23-26 of the instant application respectively and as such anticipate claims 23-26 of the instant application.

The slight difference between the instant application and the patent is the last means wherein the instant application discloses a means for selecting an underflow/overflow result and the patent discloses a means for transmitting an underflow/overflow result. However in order for transmitting an underflow/overflow

result, a means for selecting is required. Therefore, claim 23 of the instant application is a boarder version of claim 6 of the patent.

“A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim. In re Longi, 759 F.2d at 896,225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). “ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 3,700,874 to Heightley discloses a threshold logic overflow detector.
- b. U.S. Patent No. 6,631,392 to Jiang et al. disclose a method and apparatus for predicting floating-point exceptions.
- c. U.S. Patent No. 5,553,015 to Elliott et al. disclose an efficient floating point overflow and underflow detection system.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do  
Examiner  
Art Unit 2124

October 25, 2004



JOHN CHAVIS  
PATENT EXAMINER  
ART UNIT 2124

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Stephen L. Bass

Serial No. ~~TBA~~ 10/613,340

Filing Date: July 3, 2003

Confirmation No.: TBA

Examiner: ~~TBA~~ CHAT DO

Docket No. 10981292-2

For: **APPARATUS AND METHOD FOR SHARING OVERFLOW/UNDERFLOW  
COMPARE HARDWARE IN A FLOATING-POINT MULTIPLY ACCUMULATE  
(FMAC) OR FLOATING-POINT ADDER (FADD) UNIT.**

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This information disclosure statement is filed in accordance with 37 C.F.R. §§ 1.56, 1.97, and 1.98. Listed on the accompanying form PTO-1449 are documents which may or may not be considered material to the examination of this application. These documents were made of record in a prior application filed February 22, 2000 and having serial no. 09/507,851, to which priority is claimed relative to the present application pursuant to 35 U.S.C. §120. Copies of these documents are not being provided pursuant to 37 C.F.R. § 1.98(d)(1) and (2), which provides:

(d) A copy of any patent, publication, pending U.S. application or other information, as specified in paragraph (a) of this section, listed in an information disclosure statement is required to be provided, even if the patent, publication, pending U.S. application or other information was previously submitted to, or cited by, the Office in an earlier application, unless:

(1) The application is properly identified in the information disclosure statement and is relied on for an earlier effective filing date under 35 U.S.C. §120; and

(2) The information disclosure statement submitted in the earlier application complies with a paragraphs (a) through (c) of this section.

The following rights are reserved by the Applicant(s): the right to establish the patentability of the claimed invention over any of the listed documents should they be applied as reference, the right to prove that some of these documents may not be prior art, and/or the right to prove that some of these documents may not be enabling for the teachings they purport to offer.

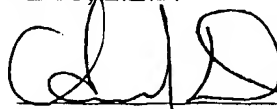
This statement should not be construed as a representation that an exhaustive search has been made, or that information more material to the examination of the present application does not exist. The Examiner is specifically requested not to rely solely on the materials submitted herewith. The Examiner is requested to conduct an independent and thorough review of the documents, and to form independent opinions as to their significance.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449 to indicate the documents have been considered.

Respectfully submitted,

**THOMAS, KAYDEN, HORSTEMEYER  
& RISLEY, L.L.P.**

By:



**Ann I. Dennen, Reg. No. 44,651  
(256) 704-3900 Ext. 101**

Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400  
Docket: 10981292-2

**CERTIFICATE OF MAILING**

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on July 3, 2003 and is addressed to:

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Commissioner for Patents  
P.O. Box 1450  
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on 7-3-2003.

Cynthia K. Dempster  
[Name of Person Signing CM]

In Re Application of:

Stephen L. Bass

Serial No. TBA

Filing Date: July 3, 2003

Confirmation No.: TBA

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For: **APPARATUS AND METHOD FOR SHARING OVERFLOW/UNDERFLOW  
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